

Editorial

The complicated relationship between weight loss and health-related quality of life: Satisfaction not guaranteed

The global burden of obesity continues to increase at an alarming rate. Kelly et al.¹ estimated that 33% of the world's adult population was overweight or obesity in 2005, and, if the trends persist, by 2030 up to 58% of the world's adult population could be either overweight or obese. Obesity is a well-known risk factor for hypertension, hyperlipidemia, type 2 diabetes, coronary heart disease, and some cancers.² Moreover, obesity has a substantially detrimental impact on health-related quality of life (HrQoL).³ HrQoL is a self-reported outcome, coming directly from affected persons concerning their life, health conditions, and treatments.⁴ This distinct set of concepts is related to an individual's feelings of well-being and perception of physical, emotional, and social functioning, which reflects the subjective evaluation and reaction to a health condition by the person.^{3,4} The majority of published studies indicate that there appears to be a “dose-response” relationship between body mass index and the degree of HrQoL impairment, and that obesity-related decrements on HrQoL tend to be most pronounced on physical domains of functioning.³

In this issue of the *Journal*, Pan et al.⁵ reported the changes of HrQoL outcomes among the participants of a weight loss trial. They recruited 67 participants with body mass index ≥ 27 kg/m² into a 3-month weight loss program. Among them, 57% participants finished the program. Two third of the completers were able to reduce weight for more than 5%, and their HrQoL outcomes, measured by the WHOQOL-BREF questionnaire (a general HrQoL measure), improved after weight loss. Meanwhile, 13 subjects could not attain the 5% weight-loss goal in the study and did not show significant improvements in HrQoL outcomes. Although this is a pilot study with a small number of subjects, it raises several issues that are worthy of discussions. First, HrQoL may be assessed by using generic measures that are applicable to any population or measure specific to the disease under study. Scores of generic measures may be compared with norms of general populations and across diseases. Disease-specific measures contain items relevance to the disease and may be more sensitive to small changes over time or small differences between groups than generic measures. Kolotkin⁶ and colleagues compared HrQoL data from 926

participants in a 1-year weight loss study and found that the results of two generic measures (the SF-36 and the EQ-5D) were inconsistent with each other. Maciejewski et al.⁴ reviewed the effects of weight-loss interventions on HrQoL in 34 randomized controlled trials and identified that even when the same generic measure was used, the treatment effects were shown for some, but not all, domains, and these domains varied across studies. They suggested that obesity-specific measures were more likely to demonstrate improvements in response to treatment than generic measures.⁴ However, Duval et al.⁷ examined 11 obesity-specific quality of life questionnaires and outlined the purpose and psychometric properties of each measure. While 9 of the questionnaires were developed specially as instruments for clinical trials, only two of them (IWQOL, OP-Scale) could exhibit responsiveness in randomized controlled trials.⁷ Because HrQoL outcomes vary with the types of measures, Kolotkin et al.⁶ proposed using an assessment battery to measure HrQoL changes in weight loss studies. Nevertheless, there is no consensus on what is the best approach in terms of a “gold standard” assessment battery. Apparently, adding a new generic measure such as the WHOQOL-BREF questionnaire into the research tool box does not help much in solving the above problems.

Second, to what extent of weight loss can benefit the HrQoL for obese subjects has been a major field of research. Many health authorities imply that a weight-change threshold exists for weight-loss interventions.⁸ Leading organizations recommend that weight loss of 5–10% is associated with benefits across a wide range of health outcomes and is considered clinically relevant.⁸ Samsa et al.⁹ analyzed data from 555 subjects to determine whether the improvement of HrQoL was noticeable for subjects achieving 5–10% weight reduction. They found that weight loss of 5–10% was significantly associated with a 10-unit improvement in the IWQOL total subscale. Wu and colleagues¹⁰ have performed a similar study in obese Chinese subjects. They described that subjects with weight loss $\geq 15\%$ had the greatest improvements in SF-36 scores whereas no changes in SF-36 scores were found in those with weight loss $< 5\%$. The investigators concluded that weight loss above 5% of baseline was necessary to show

significant improvements in HrQoL, regardless of the types of interventions. The current study also demonstrated that there were no improvements in HrQoL among the completers who lost weight <5%.⁵ It seems to us that 5% weight loss is a threshold for improvements in HrQoL across different ethnic groups.

Finally, several researchers recently promote the notion that a lifestyle-modification program characterized by an increase in physical activity and a balanced diet can reduce the risk of obesity-related comorbid conditions despite minimal or no weight change.⁸ Ross and Bradshaw⁸ summarized that the benefits of such an approach include appreciable reductions in abdominal obesity, improvements in insulin sensitivity, and increases in both skeletal muscle mass and cardiorespiratory fitness. In Pan's study,⁵ we noted that the completers with weight loss <5% still experienced significant reductions in waist circumference and diastolic blood pressure during the 3-month intervention. Although it is not clear presently how these small changes in cardiovascular risk factors being translated into hard clinical outcomes, it appears that it is time for a reappraisal of the use of weight loss as the only criteria for successful obesity management.

In conclusion, obesity is a major public health problem. The effective treatment of obesity should look beyond weight loss, addressing both the medical burden and the outcomes of HrQoL. Health care providers and the obese person should recognize the clinical relevance of 5–10% weight loss in health promotion and in improvements of HrQoL. It is important for clinicians to encourage positive lifestyle modifications in their patients continuously because the obesity treatment is a lifelong task.

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